

PROGRAMMABLE MEMORY ADDRESS AND DECODE CIRCUITS WITH
LOW TUNNEL BARRIER INTERPOLY INSULATORS

Abstract of the Disclosure

5 Structures and methods for programmable memory address and decode
circuits with low tunnel barrier interpoly insulators are provided. The decoder for a
memory device includes a number of address lines and a number of output lines
wherein the address lines and the output lines form an array. A number of logic
cells are formed at the intersections of output lines and address lines. Each of the
10 logic cells includes a floating gate transistor which includes a first source/drain
region and a second source/drain region separated by a channel region in a substrate.
A floating gate opposes the channel region and is separated therefrom by a gate
oxide. A control gate opposing the floating gate. The control gate is separated from
the floating gate by a low tunnel barrier intergate insulator. The low tunnel barrier
15 intergate insulator includes a metal oxide insulator selected from the group
consisting of PbO, Al₂O₃, Ta₂O₅, TiO₂, ZrO₂, Nb₂O₅ and/or a Perovskite oxide
tunnel barrier.

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